

ABSTRACT

A method is provided for reducing autogenous shrinkage in ultra high-strength concrete in the blending of ultra high-strength concrete with a compression strength in excess of 100 N/mm², comprising the steps of: replacing 30 vol.% or less of coarse aggregate with artificial lightweight aggregate, and blending in a expansive additive in the amount of 30 kg/m³ of concrete and/or a shrinkage reducing agent in the amount of 4 wt.% or less per unit weight of binder, and thereby bringing the amount of autogenous shrinkage at a curing age of 91 days to 0-600 $\mu\text{m}/\text{m}$. The artificial lightweight aggregate used has water absorption of 5% or greater and 20% or less, a collapse load of 1000-2000 N and a bone-dry density of 1.4-2.0 g/cm³.